

# 6

## Family Policies and Women's Employment: A Regression Analysis

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There is good reason to suspect that “family-friendly” or “women-friendly” policies such as the government provision or subsidization of child care, paid maternity leave, and extensive public employment will increase levels of female employment. There is supportive evidence from studies of individual behavior (Gustafsson and Stafford, 1992; Leibowitz, Klerman, and Waite, 1992; Barrow, 1996; Ondrich, Spiess, and Yang, 1996; Ilmakunnas, 1997; Joesch, 1997; Fagnani, 1998; Kimmel, 1998; Powell, 1998; Anderson and Levine, 1999; Ondrich et al., 1999; Michalopoulos and Robins, 2000; Smith, Downs, and O’Connell, 2001; Chevalier and Viitanen, 2002; Del Boca, 2002; Pylkkänen and Smith, 2003; Rønsen and Sundstrom, 2002; Gottschall and Bird, 2003; Hofferth and Curtin, 2003). But at the macro (country) level, the association has been largely assumed rather than demonstrated.

This assumption is based principally on cross-country differences between affluent nations. Most notable is the fact that the Nordic countries have been at the forefront in introducing and expanding these types of policies and are also the countries with the highest rates of female employment. But this apparent cross-sectional association has been more often the subject of casual observation than of careful analysis. And seldom have researchers examined the relationship between these policies and over-time changes within countries.

In their chapter in this volume, Scott Eliason, Robin Stryker, and Erik Tranby (2008) attempt to do just this. They create new measures of the extensiveness of these types of family policy, and they use qualitative comparative analysis (QCA) to examine the impact of such policies on the extent of women’s labor force participation in 14 OECD countries since 1960. In this chapter we use regression analysis to explore this issue. We examine the same set of countries during the same time periods, and

we use Eliason, Stryker, and Tranby’s family policy measures. The countries are Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Sweden, the United Kingdom, and the United States. The time periods are decades: the 1960s, 1970s, 1980s, and 1990s. Our findings are in some respects complimentary to and in other respects inconsistent with those of Eliason, Stryker, and Tranby.

Eliason, Stryker, and Tranby use women’s labor force participation rates as their dependent variable. For consistency with the other chapters in this volume, we instead examine women’s employment rates. This is unlikely to affect the findings, as the two correlate very strongly across countries and over time.

### Patterns of female employment

For those seeking to understand differences among affluent countries in employment performance, getting a handle on gender-specific employment patterns is important. Figure 6.1 shows employment rates (employed as a share of the working-age population) for men and for women as of the period 2000–05. We organize the countries into three groups familiar to macrocomparative researchers: Nordic, continental, and Anglo. These groups have been found to differentiate sets of cases that vary in socioeconomic characteristics and processes of policy determination but are relatively homogeneous internally (Esping-Andersen, 1990, 1999; Goodin et al., 1999; Huber and Stephens, 2001). However, we use the grouping simply for heuristic purposes; no causal importance of group membership is implied. Much of the cross-country variation in Figure 6.1 is in female employment. The coefficient of variation (standard deviation divided by the mean) for women’s employment is .14, compared to .07 for men’s employment.

Figure 6.2 shows trends in women’s employment over time in the 14 countries. Several things are worth noting. First, there is considerable cross-country variation in levels of women’s employment (already apparent in Figure 6.1). The Nordic countries have tended to have the highest female employment rates, followed by the Anglo countries, with the continental countries lagging behind. Secondly, women’s employment has increased in all of the countries. Thirdly, the countries vary markedly in degree and timing of this over-time increase. The Nordic countries tended to experience growth in the 1960s, 1970s, and 1980s, but then stagnation or decline in the 1990s. The Anglo countries experienced steady growth throughout the four decades. Three of the continental



Figure 6.1 Men's and women's employment, 2000–2005  
 Note: For data definitions and sources, see the chapter appendix.

countries – France, Germany, and Italy – experienced no significant change in women's employment rates in the 1960s, 1970s, and 1980s, but then some increase in the 1990s. Another continental country, the Netherlands, experienced by far the most dramatic change, with an increase in the female employment rate of nearly 30 percentage points since the mid-1980s.

What role have family policies played in generating this cross-country and over-time variation in female employment? We follow Eliason, Stryker, and Tranby in focusing on the impact of three types of policy: public child care (separated into two age groups: 0 to 2 and 3 to 5), maternity leave, and public employment. They also examine the impact of child allowances/benefits, but we do not because there is no reason to expect this type of policy to increase women's employment (if anything, the reverse is true, as a child allowance provides income that is not conditional on prior or current employment).

**Family policies as causally sufficient?**

Eliason, Stryker, and Tranby's conclusion with respect to the impact of family policies is that "High levels of public sector expansion, public day-care for younger children, and maternity leave are, separately, causally sufficient for high levels of female labor force participation" (p. 163). These inferences are based on the patterns shown in Figure 6.3.

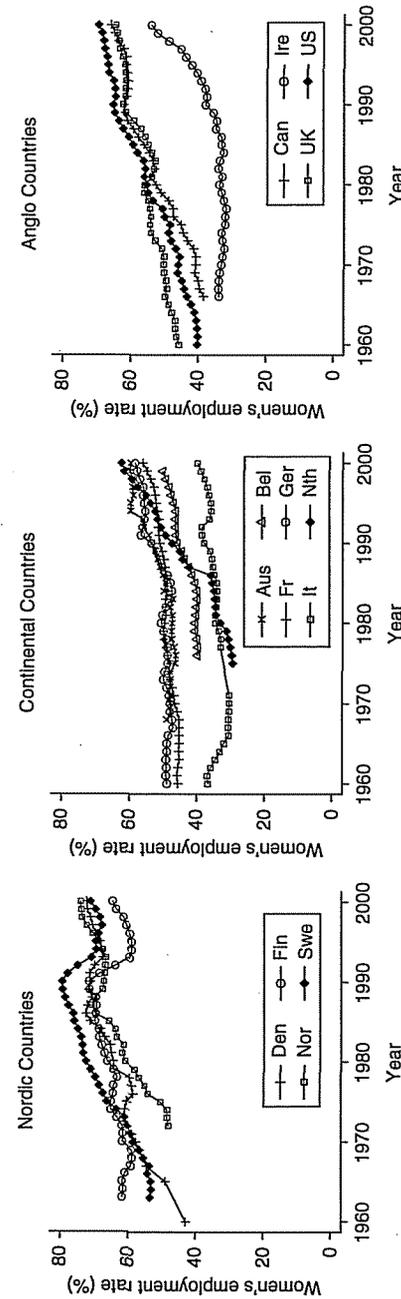


Figure 6.2 Women's employment rates, 1960–2000  
 Note: Missing data: 1960–67 for Austria; 1960–75 for Belgium; 1960–65 for Canada; 1961–64, 1996, 1998 for Denmark; 1960–62 for Finland; 1960–65 for Ireland; 1972–76 for Italy; 1960–74 for the Netherlands; 1960–62 for Norway; 1960–62 for Sweden; For data definitions and sources, see the chapter appendix.

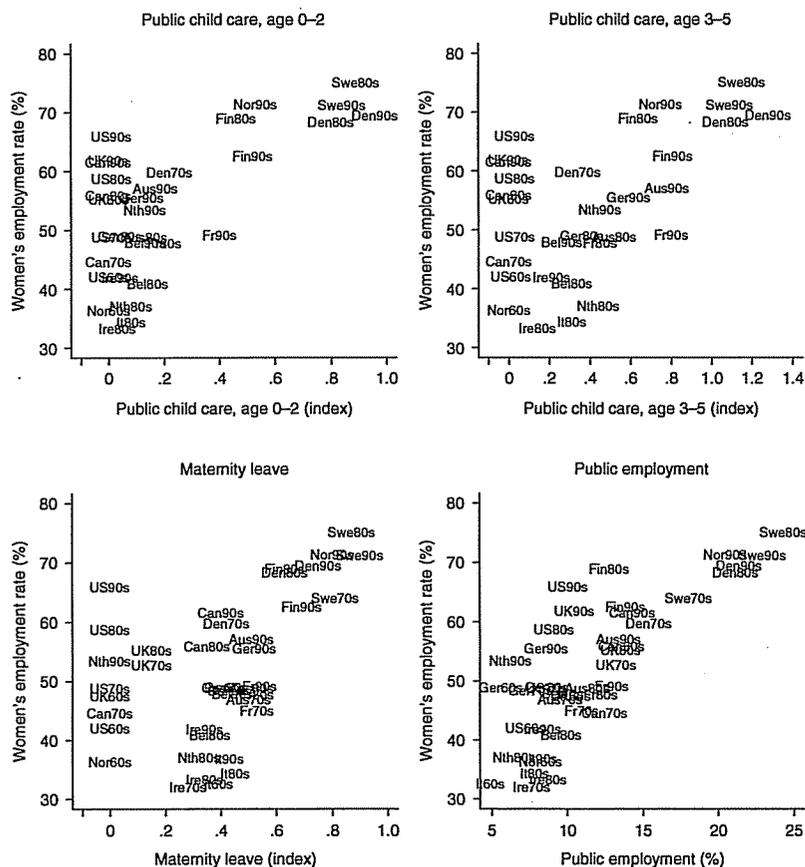


Figure 6.3 Women's employment by family policies, decade averages, 1960s–1990s

Note: For data definitions and sources, see the chapter appendix.

The figure includes four scatterplots. Each chart has women's employment rates on the vertical axis and one of the four family policy measures on the horizontal axis. The data points are decade averages for each of the twelve countries (so each country appears up to four times, depending on missing data).

The patterns in the charts in Figure 6.3 are consistent with an inference of "causal sufficiency." Causal sufficiency means that "if X, then Y." Here this can be read as "if family policy is generous, then the female employment rate will be high." In Figure 6.3, in all observed instances

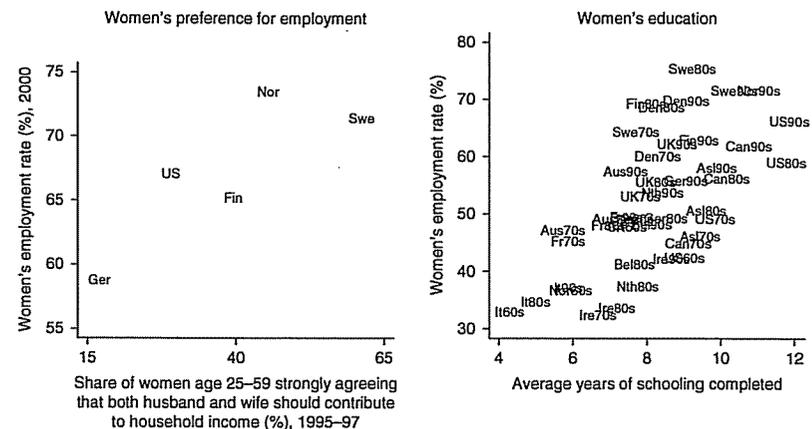


Figure 6.4 Women's employment by women's preference for employment and women's education

Note: For data definitions and sources, see the chapter appendix.

of generous family policy (to the right on the charts' horizontal axes), women's employment is indeed high.

But are these patterns enough to warrant a reading of causal sufficiency? No. As is almost always the case in analyses of non-experimental data, there is reason to worry about spuriousness. The "sufficiency" patterns in Figure 6.3 hinge on the position of the Nordic countries, and there are factors other than generous family policies that might be the true cause(s) of those countries' high female employment rates.

One is women's preferences for employment (Hakim, 2000; Bielenski, Bosch, and Wagner, 2002). Perhaps more women in the Nordic countries prefer employment over staying home than is the case in other countries. The first chart in Figure 6.4 shows a positive association between the share of women aged 25 to 59 strongly agreeing that both husband and wife should contribute to household income and the female employment rate. Unfortunately, we are unable to include women's preferences in our analyses because the number of countries for which data are available is too small. Moreover, reliable longitudinal data on women's preferences are altogether absent. This is particularly problematic because women's preferences might be endogenous; if family policies (or some other factors) boost the share of women in employment, this may become the norm and generate a preference in favor of it.

A second potential source of spuriousness is women's educational attainment. Within countries there is a positive association across

individuals between educational attainment and likelihood of employment (OECD, 2004, p. 147). Across countries, too, the average level of educational attainment among women and the female employment rate are positively correlated. This can be seen in the second chart in Figure 6.4, which uses the average number of years of schooling completed among women age 25 and over as a measure of women's educational attainment. The data points in this chart are decade averages.

Eliason, Stryker, and Tranby's sufficiency argument is that when family policy is generous, female employment will be high, regardless of other institutions, policies, and conditions in the country. As noted in the introductory chapter to this volume, cases that score high on the hypothesized causal factor are the key in assessing a hypothesis of causal sufficiency; cases scoring low on the causal factor are analytically irrelevant. For a hypothesis of causal sufficiency, then, spuriousness is a concern if there is a causal factor that is plausibly related to the outcome on theoretical grounds and that is similar to the hypothesized causally sufficient factor(s) for the cases that score high on the hypothesized factor(s). Women's educational attainment fits the bill. There is good reason to think that high levels of female educational attainment increase women's employment, by changing women's preferences and by increasing their earnings capacity. And the Nordic countries, which are characterized by generous family policies, have high levels of female educational attainment. This can be seen in the charts in Figure 6.5, which plot women's education by the family policy measures for the Nordic countries. To feel confident that generous family policy is a sufficient condition for high women's employment, we need a case with generous family policy but low women's educational attainment. Unfortunately, no such cases exist.

### A regression approach

If we shift from a deterministic hypothesis of causal sufficiency to a tendential hypothesis, we can get more leverage on the question of whether the apparent impact of generous family policies on women's employment is spurious. A tendential hypothesis would be that generous family policies tend to increase women's employment, rather than that they will always yield high women's employment. For a tendential hypothesis, the fact that family policy generosity correlates strongly with women's educational attainment among the Nordic countries is not an obstacle as long as they do not correlate too strongly among the full set of countries. As it turns out, they do not. Women's education correlates at .17 with public child care for age 0–2, at .04 with public child care for age

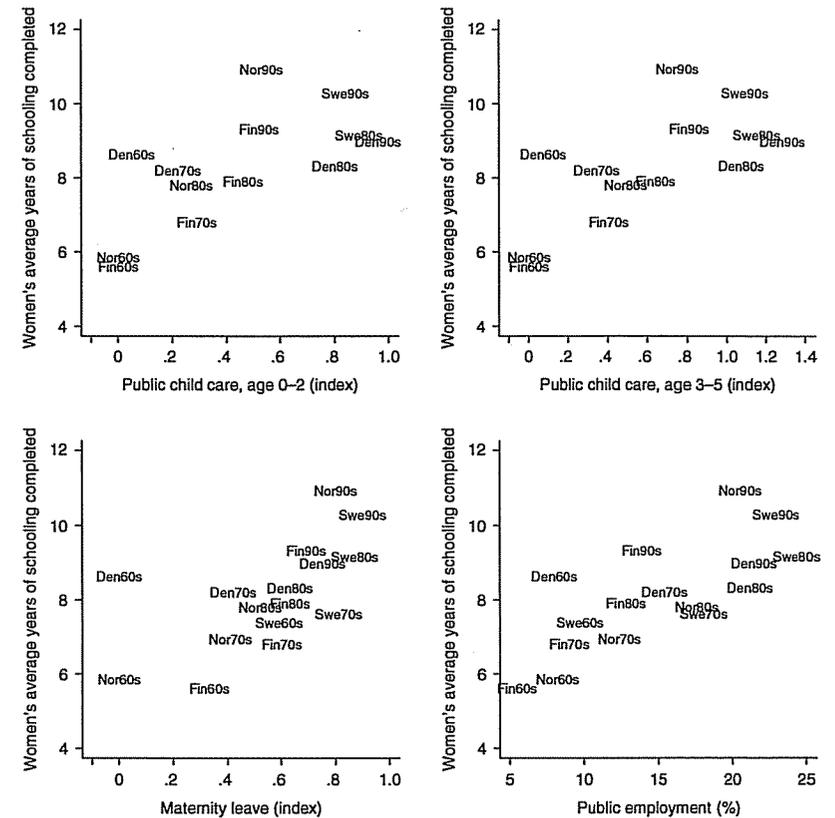


Figure 6.5 Women's educational attainment by family policies, Nordic countries, 1960s–1990s

Note: For data definitions and sources, see the chapter appendix.

3–5, at  $-.06$  with maternity leave, and at  $.47$  with public employment. These correlations are weak or moderate in strength because the Anglo countries tend to have moderate-to-high levels of female educational attainment but low levels of family policy generosity, while the reverse is true for a number of the continental countries.

A standard approach for assessing a tendential hypothesis about the impact of a variable net of one or more other variables is multivariate regression. Because we are interested in the independent effects of the three types of family policies, our first inclination would be to include all four of the family policy measures – two of public child care and one each of maternity leave and public employment – together in a regression with

Table 6.1 Correlations between family policy measures

	Public child care, age 0–2	Public child care, age 3–5	Maternity leave
Public child care, age 3–5	0.89		
Maternity leave	0.79	0.80	
Public employment	0.84	0.70	0.70

Note:  $N = 37$ . For data definitions and sources, see the chapter appendix.

Table 6.2 Principal components analysis of the four family policy measures

	Factor loadings	
	Factor 1	Uniqueness
Public child care, age 0–2	0.96	0.07
Public child care, age 3–5	0.93	0.14
Maternity leave	0.90	0.20
Public employment	0.88	0.22

Note:  $N = 35$ . One factor retained. Eigenvalue: 3.37. Proportion of variance in items explained: 0.84. For data definitions and sources, see the chapter appendix.

women's educational attainment. However, the family policy measures are too closely correlated with one another to permit this. Table 6.1 shows a correlation matrix for the four measures. For the 37 country-decade observations, the correlations among the measures range between .70 and .89. The inclusion of variables this highly intercorrelated in the same regression would create a severe multicollinearity problem.

One option, therefore, is to estimate separate regressions, each including one of the family policy measures along with women's educational attainment. Another option is to combine the family policy variables into a single measure. A "principal components" analysis of the four family policy measures yields a component with four high loadings (the smallest is .88) which explains 85 percent of the variance in the variables. A "principal factor" analysis yields a first factor that correlates at .99 with this first principal component "factor" (Table 6.2). We use this first factor as a composite measure of family policy.

We estimate a series of pooled cross-section time-series regressions of female employment rates on each of the family policy variables – first on the family policy measures alone and then controlling for women's

educational attainment. To avoid multicollinearity, we enter the family policy variables in separate regressions. A pooled regression approach is useful because we are interested both in the cross-country variation at particular points in time and in the over-time variation within countries. We estimate these regressions using ordinary least squares, with a "robust cluster" option that adjusts the standard errors for the nonindependence of observations within countries (clusters) and is appropriate for "unbalanced" panels in which the number of observations differs across countries (Bradley et al., 2003; Moller et al., 2003).

The regression results are presented in Table 6.3. For each regression we list the unstandardized coefficients, t-statistics (in parentheses), and adjusted  $R^2$ . The odd-numbered columns show the results of bivariate regressions. The even-numbered columns show results controlling for women's educational attainment. We describe the former first and then turn to the latter.

### Bivariate results

In the bivariate regressions in the table's first set of rows, each of the family policy variables as well as the composite (factor score) measure has the expected positive sign and a substantively strong coefficient. For example, the coefficient for the public child care age 0–2 variable suggests that a country scoring 1 on the index had, on average, a female employment rate about 25 percentage points higher than a country scoring 0 on the index (column 1). The estimated magnitude of the difference between the low and high end is very similar for each of the other three family policy measures.

To focus on the cross-country variation, we can add a set of period (decade) dummy variables to these regressions (we use the 1980s as the reference group). The results are shown in the second set of rows in Table 6.3. There is no noteworthy reduction in the magnitude of the family policy coefficients.

A pooled model with time (period) dummies essentially duplicates the findings of a simple cross-sectional model; it expunges over-time within-country variation and estimates an average set of results based on purely cross-country variation. What this type of pooled model does, in effect, is to stack cross-sections together. Where there is little change in cross-sectional variation across time, the chief advantage is to increase degrees of freedom. That is the case here: between 61 and 68 percent of the variance in the independent variables, and 70 percent of the variance in female employment, is between countries. In the third set of rows

Table 6.3 Regression results

	Public child care, age 0-2			Public child care, age 3-5			Maternity leave			Public employment			Family policy factor scores		
	1	2	3	4	5	6	7	8	9	10					
All countries; no period or country dummies															
Family policy variable	26.9 (5.6)	24.5 (8.1)	16.6 (3.2)	17.6 (5.2)	22.1 (2.3)	23.7 (5.2)	1.9 (8.0)	1.5 (9.4)	8.1 (5.1)	7.5 (12.1)					
Women's education		4.2 (9.5)		4.9 (11.5)		4.8 (10.6)		2.9 (7.6)		4.3 (9.0)					
Adjusted R <sup>2</sup>	0.43	0.73	0.28	0.69	0.21	0.70	0.62	0.76	0.48	0.79					
Time period dummies <sup>a</sup>															
Family policy variable	24.2 (4.2)	17.3 (6.7)	14.1 (2.0)	23.2 (3.9)	17.5 (1.5)	26.0 (4.8)	1.8 (6.6)	1.5 (8.5)	7.5 (3.5)	7.6 (8.4)					
Women's education		3.9 (7.1)		4.8 (7.8)		5.2 (8.4)		2.7 (5.5)		4.3 (9.0)					
Adjusted R <sup>2</sup>	0.47	0.71	0.29	0.66	0.22	0.69	0.63	0.75	0.47	0.77					
Cross-section of 1980s and 1990s averages															
Family policy variable	26.4 (3.0)	23.9 (4.5)	15.8 (1.9)	18.5 (4.1)	22.8 (1.8)	28.8 (3.9)	0.5 (3.5)	1.6 (5.7)	5.3 (4.6)	7.6 (5.4)					
Women's education		4.9 (4.7)		5.9 (5.3)		6.0 (5.2)		3.6 (3.8)		5.1 (5.5)					
Adjusted R <sup>2</sup>	0.38	0.81	0.24	0.78	0.20	0.77	0.47	0.84	0.65	0.82					

(Continued)

Table 6.3 (Continued)

	Public child care, age 0-2			Public child care, age 3-5			Maternity leave			Public employment			Family policy factor scores		
	1	2	3	4	5	6	7	8	9	10					
Country dummies (full set) <sup>a</sup>															
Family policy variable	30.4 (2.6)	8.3 (1.0)	22.4 (2.7)	5.1 (0.8)	33.5 (4.0)	7.1 (1.0)	2.3 (5.4)	0.5 (1.1)	10.3 (3.5)	2.5 (0.9)					
Women's education		6.9 (5.3)		6.1 (5.2)		5.2 (5.5)		5.0 (4.5)		5.8 (4.2)					
Adjusted R <sup>2</sup>	0.55	0.83	0.56	0.83	0.73	0.87	0.78	0.88	0.64	0.83					
Denmark and Sweden excluded <sup>b</sup>															
Family policy variable	28.4 (2.3)	29.8 (4.4)	9.1 (1.0)	15.8 (2.9)	9.7 (0.8)	17.5 (3.1)	2.2 (5.0)	1.5 (3.7)	7.6 (2.1)	8.3 (5.0)					
Women's education		4.4 (9.7)		4.9 (11.9)		4.6 (12.1)		3.1 (5.5)		4.5 (7.9)					
Adjusted R <sup>2</sup>	0.17	0.63	0.02	0.59	0.02	0.63	0.42	0.65	0.20	0.72					
N	31	31	31	31	40	40	41	41	27	27					

Notes: Unstandardized coefficients and absolute t-statistics (in parentheses) from ordinary least squares (OLS) regressions with "robust cluster" option (country is the clustered variable). Unit of analysis is the country-decade. Dependent variable is women's employment rate. For data definitions and sources, see the chapter appendix.

<sup>a</sup> Results for dummy variables are not shown to save space.

<sup>b</sup> No time period or country dummies included. Excluding Denmark reduces the number of observations by three. Excluding Sweden reduces the number of observations by two for the public child care regressions and by three for the maternity leave and public employment regressions.

in Table 6.3, we show the results from a model that simply estimates the 1980s and 1990s means of variables' values for the 1980s and 1990s panels alone, as these are virtually free of missing data for any variable. (Actually, 1990s data are missing for child care in Italy and for maternity leave in the United Kingdom and for the composite family policy measure for these two countries; we substitute 1980s values for these variables.) The results for these strictly cross-sectional estimates of family policy effects are always similar to those in most of the other models.

To focus on the over-time variation within countries, we can add a set of country dummies. This seems particularly likely to reduce the estimates of the impact of family policies because there are more countries than time periods (14 versus four), there is more variation in family policies across countries than over time within countries, and country-specific features such as culture may influence both family policy and women's employment. The results with country dummies are in the fourth set of rows in Table 6.3. Perhaps surprisingly, the coefficients do not decrease, at least in models without a control for female educational attainment (odd-numbered columns).

The scatterplots in Figure 6.3 above suggest a key role for Denmark and Sweden. These two countries have tended to have by far the most generous family policies and also the highest rates of women's employment. To what degree does the association between family policy and women's employment hinge on these two nations? Regression results with Denmark and Sweden omitted are shown in the fifth set of rows in Table 6.3. Here we do observe a noteworthy decline in the magnitude of the estimated effect for two of the family policy measures – public day care for children age 3–5 and maternity leave. The coefficients for these two measures decrease by more than half, the t-statistics are only around 1.0, and the adjusted  $R^2$ s fall to nearly zero.

### Multivariate results controlling for women's education

What happens when we control for women's educational attainment (average years of schooling completed among women aged 25 and over)? The findings are in the even-numbered columns in Table 6.3. Consistent with the bivariate pattern shown in the second chart in Figure 6.4 above, substantively strong and statistically significant effects are evident for female educational attainment in all of the models.

In many of the models the estimates for the family policy measures remain similar to those in the bivariate regressions. However, in the models with country fixed effects (country dummies) the coefficients

and t-statistics for the family policy variables drop dramatically. The coefficient for female education, by contrast, does not decline.

What should we make of this? The common interpretation is that the associations between the family policy measures and women's employment are probably spurious; they are artifacts of unmeasured nation-specific differences, rather than truly causal. That might be the correct inference. But we should be careful about settling on this conclusion too quickly.

The presumed spuriousness may be mistaken, either because (a) there are no such unmeasured variables with the stipulated traits and inclusion of units simply truncates variance in X or (b) the unmeasured correlates of the units affecting Y and attenuating the estimate for X are consequences of X and thus mere technical causes of bias in a structural coefficient but not causes of any spuriousness. It is also possible that the units correlate with unmeasured interaction terms which would, could they be measured, reveal notable effects for a subset of cases. But that does not mean such a variable has no causal impact. Suppose the economic or social or political environment in countries changes in ways conducive to women's employment. Perhaps, for instance, women's (and maybe men's) attitudes toward female employment become more encouraging. But suppose the degree to which this yields an actual increase in female employment depends on the degree to which a country has supportive family policies. Ideally, the researcher would model this via an interaction between women's attitudes and family policies. But suppose we lack good data on women's attitudes; perhaps cross-nationally comparable survey data are not available, or those data do not effectively capture attitudes. Without such an interaction, it would be impossible to capture the effect of unchanging family policies in a pooled regression with country fixed effects. Instead, an appropriate model might be a cross-sectional design with women's employment measured in change scores and family policies measured in (average) levels (see, for example, Kenworthy, 2004, 2008).

Yet this is not what accounts for the family policy variables' results in the "country dummies" regressions in Table 6.3 here. Figures 6.6 through 6.9 show the over-time data for the four family policy measures: public child care for age 0–2, public child care for age 3–5, maternity leave, and public employment. Figure 6.10 shows over-time trends in the factor scores derived from these four policy measures and used in the regressions in Table 6.3. While some of the trend lines indicate little or no change over time – most notably, child care support in the Anglo countries – in most countries family policy generosity has increased. Thus, lack of over-time variation does not appear to be the problem for the family policy variables.

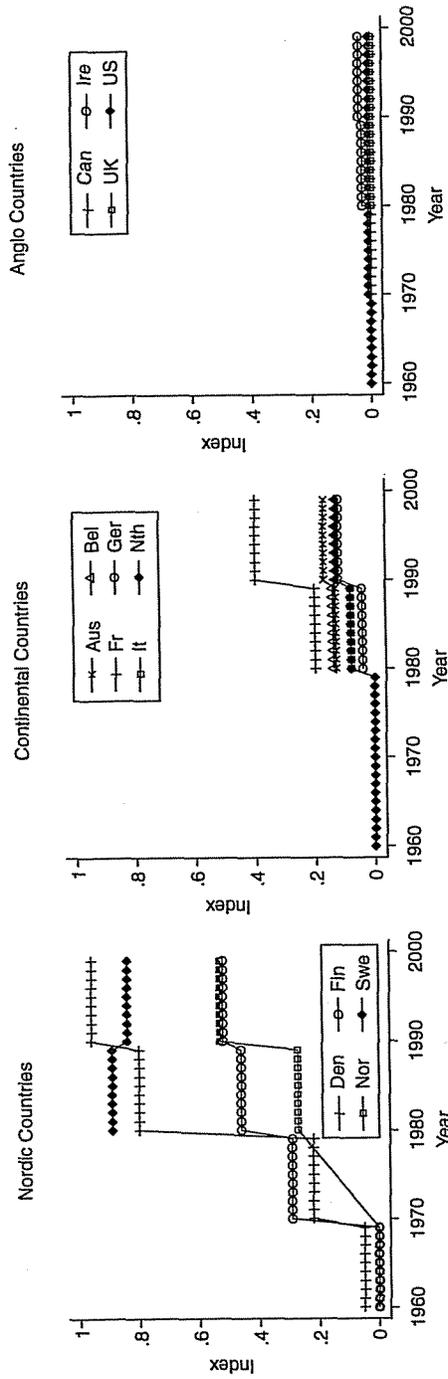


Figure 6.6 Public child care, age 0-2, 1960s-1990s

Note: Data are decade averages. Missing data: 1960s and 1970s for Austria, Belgium, France, Germany, Ireland, Sweden, and the United Kingdom; 1960s, 1970s, and 1990s for Italy; 1970s for Norway. For data definitions and sources, see the chapter appendix.

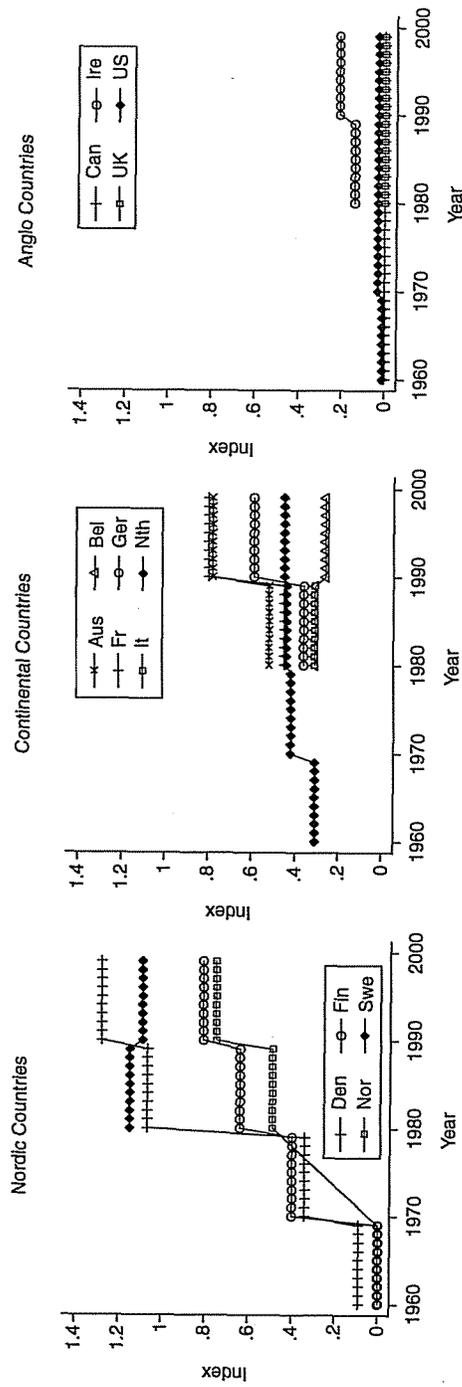


Figure 6.7 Public child care, age 3-5, 1960s-1990s

Note: Data are decade averages. Missing data: 1960s and 1970s for Austria, Belgium, France, Germany, Ireland, Sweden, and the United Kingdom; 1960s, 1970s, and 1990s for Italy; 1970s for Norway. For data definitions and sources, see the chapter appendix.

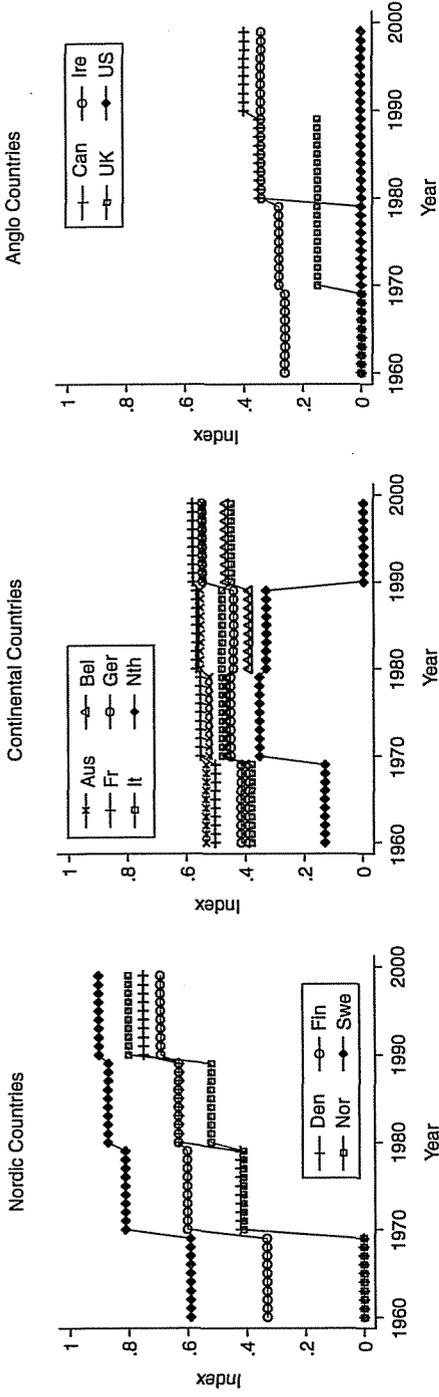


Figure 6.8 Maternity leave, 1960s-1990s

Note: Data are decade averages. Missing data: none. For data definitions and sources, see the chapter appendix.

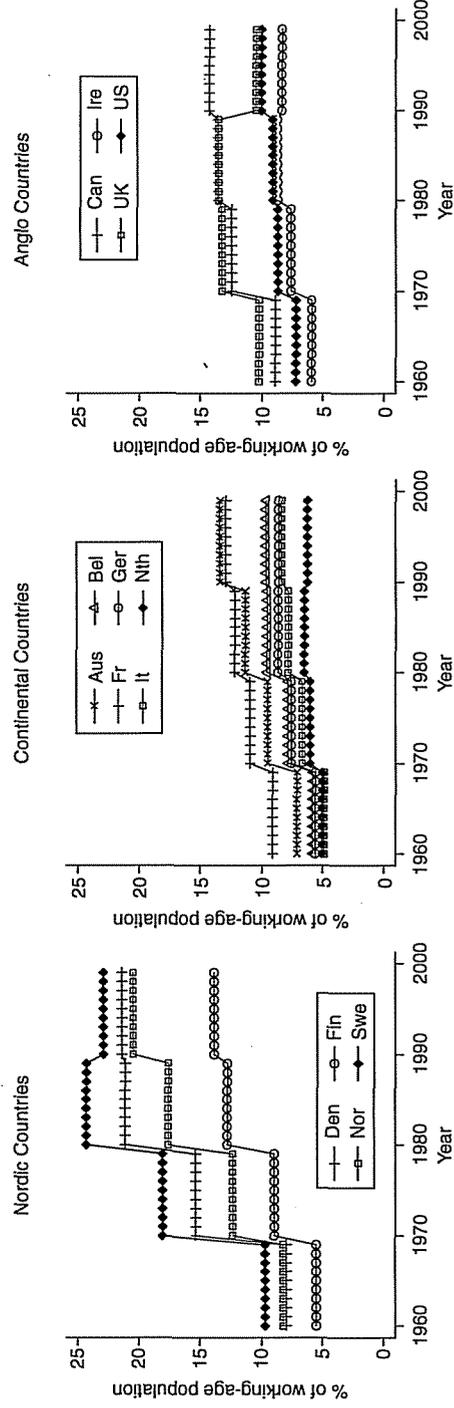


Figure 6.9 Public employment, 1960s-1990s

Note: Data are decade averages. Missing data: 1960s and 1970s for Belgium. For data definitions and sources, see the chapter appendix.

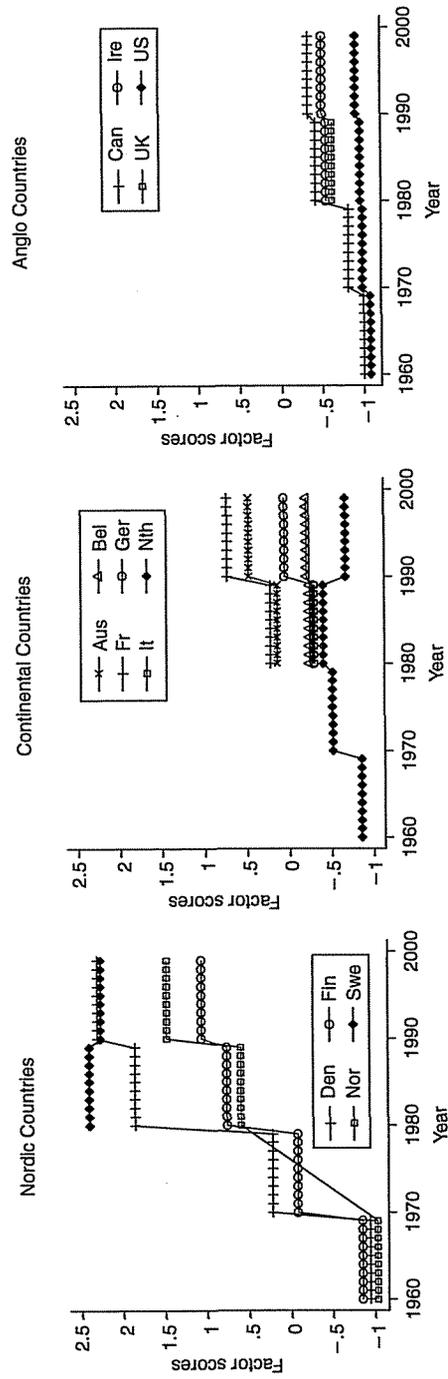


Figure 6.10 Family policy factor scores, 1960s-1990s

Note: Data are decade averages. Missing data: 1960s and 1970s for Austria, Belgium, France, Germany, Ireland, and Sweden; 1960s, 1970s, and 1990s for Italy and the United Kingdom; 1970s for Norway. For data definitions and sources, see the chapter appendix.

Moreover, the coefficients for the family policy variables shrink not when country fixed effects are added to the regressions, but rather when the country fixed effects *and* women's educational attainment are added. This suggests that over time within countries, female employment is more closely associated with women's educational attainment than with family policy generosity.

Careful inspection of the scatterplots and time plots in Figures 6.2-6.10 suggests that this is due to developments in a variety of countries. The generosity/extensiveness of family policies increased in the Nordic countries, particularly during the 1960s, 1970s, and 1980s. This corresponds to the steady increase in female employment rates in these countries during those three decades. But other countries are more problematic.

Women's employment rates in the Anglo countries rose steadily during the four decades, and the extent of this rise was on par with that in the Nordic countries. Trends in public child care are of no help in explaining this development. Trends in maternity leave and public employment are consistent with the rise in women's employment, but they seemingly were not large enough to be of much explanatory relevance – certainly not in the United States, at least.

A second problematic pattern is the rise in the level of women's employment in a number of the continental countries in the 1990s after effectively no change in the 1960s, 1970s, and 1980s. For the family policies for which early data are available, the data suggest increasing generosity in these countries throughout the period, not just in the 1990s. Perhaps the policies produced a slow release of cultural pressures on women and employers that inhibit female labor force participation.

The Netherlands is also a problematic case in terms of over-time trends. From the mid-1980s the female employment rate in the Netherlands rose dramatically. None of the country's family policies were significantly altered prior to or during this period. Indeed, studies of the Dutch case seldom assert a substantial role for government policy in precipitating the rise in female employment (for example, Visser, 2002; Misra and Jude, this volume).

Finally, a fourth problematic trend is the stagnation (and, in some cases, the decline) in female employment rates in the Nordic countries in the 1990s. Part of this owes to the economic crises experienced by Finland and Sweden during the first half of the decade, and part of it may be a product of a "ceiling" effect (female employment may have neared its maximum achievable level by the early 1990s). Still, the pattern is not what we would expect given the continued increase in family policy generosity in most of these countries during that decade.

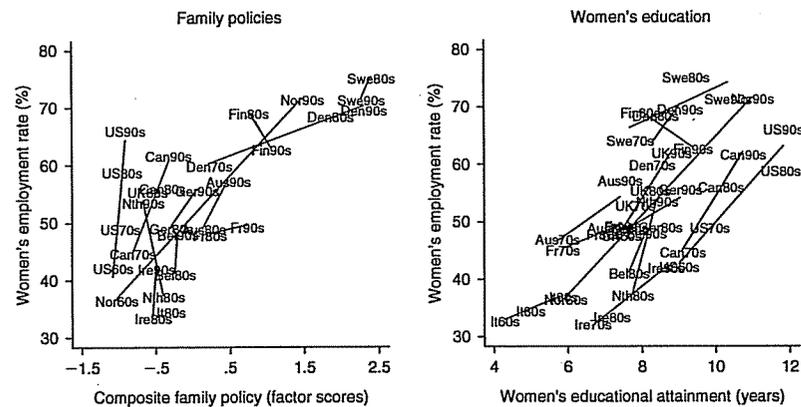


Figure 6.11 Women's employment by family policies and by women's education: over-time within-country patterns

Note: For data definitions and sources, see the chapter appendix.

Over-time trends in female educational attainment cannot fully account for these developments, but the association between women's schooling and female employment is much stronger than is the case for family policies. A useful way to see this is via the scatterplots in Figure 6.11. The first shows women's employment by the composite family policy variable; the second shows women's employment by women's education. Both plots feature pooled data, and in each we show within-country regression lines. One issue is that the data are more complete for women's educational attainment than for the family policy variable, but the key thing to note is that several of the regression lines in the family policy plot are vertical or nearly so. This indicates a rise in female employment despite little or no increase in the generosity of family policy. By contrast, virtually all of the lines in the women's education plot have the expected positive slope.

What of the possibility that it is, in fact, levels of family policy generosity that have influenced over-time trends in women's employment? We can test this with an OLS regression of women's employment change (measured as 1990s average minus 1970s average; 1960s data are not available for many countries) on the average level of family policy generosity over the four decades. Table 6.4 shows the results of such a regression for each of the family policy measures, both with and without a control for change in female educational attainment. These findings offer little support for the hypothesis. Virtually all of the family policy

Table 6.4 Regression results: change in women's employment on level of family policy generosity

	No control for change in women's educational attainment	Control for change in women's educational attainment	Controls for initial level of women's employment and for change in women's educational attainment
Public child care, age 0-2	-10.0	-17.9	-3.3
Public child care, age 3-5	-8.4	-11.7	-4.7
Maternity leave	-23.0	-31.4	-23.2
Public employment	0.04	-0.42	1.12
Family policy factor scores	-3.4	-5.8	-2.3

Note: Unstandardized coefficients.  $N = 14$ . For data definitions and sources, see the chapter appendix.

coefficients are negative, even without controlling for women's schooling. The one exception is the coefficient for public employment in the third column. In the regressions reported in that column, the initial level of women's employment is controlled for. This takes into account the possibility of a ceiling effect, whereby countries beginning (in 1979) with a high level of female employment find it more difficult to realize further increases. Here the coefficient is positive, as expected. It also is statistically significant (at the .10 level), and the standardized coefficient is larger than that for the change in women's education variable. This suggests some indication of a positive effect of family policy on over-time trends in female employment rates.

On the other hand, public employment is less directly a family policy than are child care and maternity leave, in the sense that the level of public employment is aimed less at promoting women's employment. Arguments for generous family-friendly policies tend to focus on child care and parental leave.

## Conclusion

We have suggested reasons to question Eliason, Stryker, and Tranby's conclusion that generous family policy is a sufficient condition for high levels of women's employment. That conclusion hinges on the generous family policies and high female employment rates in the Nordic countries, and it could be that high levels of women's education are the true cause of high female employment in those countries. To examine the net effect of family policies, we turn to a tendential hypothesis and

use regression analysis. When we control for female educational attainment and country fixed effects, much of the association between family policy generosity and women's employment disappears. Our best guess is that generous family policies have helped to boost women's employment, but the macrocomparative evidence is less than overwhelming in support of this conclusion.

### Appendix: Variable Definitions and Data Sources

The data used in this chapter are available at [www.u.arizona.edu/~lkenwor](http://www.u.arizona.edu/~lkenwor).

*Employment: men's.* Employed men as a share of the male population age 15 to 64. Source: Author's calculations from data in OECD (2006).

*Employment: women's.* Employed women as a share of the female population age 15 to 64. Source: Author's calculations from data in OECD (2006).

*Family policy factor scores.* See the text for discussion. Source: Author's calculations.

*Maternity leave.* Index of the generosity of maternity leave. Source: Stryker et al. (2008, table 3).

*Public child care, age 0–2.* Index of the generosity of government provision and subsidization of child care for children age zero to two. Source: Stryker et al. (2008, table 4).

*Public child care, age 3–5.* Index of the generosity of government provision and subsidization of child care for children age zero to two. Source: Stryker et al. (2008, table 5).

*Public employment.* Persons employed in the public sector as a share of the population age 15 to 64. Source: Stryker et al. (2008, table 2).

*Women's education.* Average years of schooling completed among women age 25 and over. Source: Barro and Lee (n.d.).

*Women's preference for employment.* Share of women age 25 to 59 strongly agreeing that both husband and wife should contribute to household income. Source: Author's calculations from data in World Values Survey (1995–97).

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